52

WEST Search History

DATE: Tuesday, April 23, 2002

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	DB=USPT,PGPB,DWPI; PLUR=YES; OP=OR		
L17	L16 and l9	32	L17
L16	L15 and l14	41	L16
L15	L14 and ((supress or inhibit) same (Fas and ligand and bind))	41	L15
L14	Fas and (Fas near ligand)	370	L14
L13	L10 and @PY>=1998	767	L13
L12	L10@PY >=1998	4294967295	L12
L11	L10 @PY >=1998	4038761	L11
L10	L9 and l2	834	L10
L9	(autoimmune or auto-immune or auto?immune) and (disease or disfuntion or dysfunction)	19132	L9
L8	L7 and L3	30	L8
L7	L6 and demyelinat$	637	L7
L6	(autoimmune or auto-immune or auto?immune) and (disease or disfuntion)	19101	L6
L5	autoimmune and (disease or dysfunction)	18062	L5
L4	autoimmune and disease or dysfunction	31402	L4
L3	L1 and L2	482	L3
L2	Fas or (Fas near ligand)	32588	L2
L1	apoptosis and (autoimmune or auto-immune or auto?immune)	2002	L1

END OF SEARCH HISTORY

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L60: Entry 16 of 21 File: USPT May 9, 2000

DOCUMENT-IDENTIFIER: US 6060054 A
TITLE: Product for T lymphocyte immunosuppression

Brief Summary Paragraph Right (2):
A wide variety of medical treatments require regulation of the immune response in a patient. Such treatments include, for example, vaccinations, treatments for autoimmune diseases, immunodeficiency diseases, immunoproliferative diseases and treatments involving the transplantation of organs and skin. Traditional reagents and methods used to regulate a subject's immune response often results in unwanted side effects. For example, immunosuppressive reagents such as cyclosporin A, azathioprine and prednisone are used to suppress the immune system of a patient with an autoimmune disease or patients receiving transplants. Such reagents, however, suppress a patient's entire immune response, thereby crippling the ability of the patient to mount an immune response against infectious agents not involved in the original disease. Due to such harmful side effects and the medical importance of immune regulation, reagents and methods to regulate specific parts of the immune system have been the subject of study for many years.

Brief Summary Paragraph Right (9):
More specifically, one embodiment of the present invention includes a T lymphocyte veto molecule which includes a chimeric molecule having a protein selected from the group consisting of CD4 protein, CD2 protein, CD28 protein, CTLA4 protein, Fas-ligand protein, CD5 protein, CD7 protein, CD9 protein, CD11 protein, CD18 protein, CD27 protein, CD43 protein, CD45 protein, CD48 protein, B7.1 protein and B7.2 protein. The protein is linked to a targeting polypeptide that binds to a molecule that differentiates a host cell from a tissue graft cell. A further embodiment of the present invention is a T lymphocyte veto molecule which includes a chimeric molecule having one of such proteins. In this embodiment, the protein is linked to a targeting polypeptide that binds to a molecule which selectively targets a stimulator cell involved in an autoimmune response. In further aspects of these embodiments, the targeting polypeptide can be an immunoglobulin molecule, a growth factor or a tissue specific antigen. Such T lymphocyte veto molecules can be included in therapeutic compositions which also include pharmaceutically acceptable carriers.

Detailed Description Paragraph Right (34):
One embodiment of a stimulator cell marker (SCM) molecule of the present invention includes a molecule capable of targeting an RCA protein of the present invention to a desired cell. In particular, an SCM molecule of the present invention includes, but is not limited to an immunoglobulin molecule (an antibody), a growth factor or a tissue-specific antigen. A suitable antibody for use as an SCM molecule of the present invention binds to a protein on the surface of a stimulator cell of the present invention. A preferred antibody of the present invention binds to a protein on the surface of a tissue graft cell or a cell involved in an autoimmune response. A more preferred antibody of the present invention binds to a major histocompatibility molecule (MHC), including Class I and Class II, or an organ-specific molecule, such as molecules expressed on the surface of kidney cells (e.g., sodium-potassium-chloride cotransporters; see Herbert et al., 1994, Clin. Invest. 72: 692-694), liver cells (e.g., asialoglycoprotein receptor; see Merwin et al., 1994, Bioconjugate Chem. 5: 612-620; bile acid receptors; see Krmaer et al., 1992; J. Bio. Chem. 267: 18598-18604; LMA surface target molecules; see Stemerowicz et al., 1990, J.Clin. Lab. Immunol. 32: 13-19); heart cells (e.g., heart specific auto-antibodies; see Neumann, et al., 1992, J. Immunol. 148: 3806-3813; Traystman et al., 1991, Clin. Exp. Immunol. 86: 291-298); pancreas cells or bone marrow cells (e.g., c-kit receptor; see Okayama et al., 1994, J. Immunol. Meth. 169: 153-161; Bridell et al., 1992, Blood 79: 3159-3167.

Detailed Description Paragraph Right (37):
A suitable growth factor for use as an SCM molecule of the present invention binds to a receptor on the surface of a stimulator cell of the present invention. A preferred growth factor of the present invention binds to a receptor on the surface of a tissue

graft cell or a cell involved in an autoimmune response. A more preferred growth factor of the present invention includes, but is not limited to thyroid stimulating hormone (TSH), vasopressin or corticotropin.

Detailed Description Paragraph Right (38):
A suitable growth factor for use as an SCM molecule of the present invention binds to a tissue-specific marker on the surface of a stimulator cell of the present invention. A preferred SCM molecule of the present invention binds to a tissue specific marker on the surface of a tissue graft cell or a cell involved in an autoimmune response. A more preferred SCM molecule of the present invention includes, but is not limited to asialoglycoprotein receptor, (TSH) receptor, vasopressin receptor or corticotropin receptor.

Detailed Description Paragraph Right (53):
Soluble RCA proteins or SCM molecules of the present invention can be purified using, for example, immunoaffinity chromatography using an antibody capable of binding to CD4, CD2, CD28, CTL4A, fas-ligand or the C region of an immunoglobulin molecule or an antigen capable of binding to the V region of immunoglobulin molecule. RCA proteins or SCM molecules anchored in a lipid-containing substrate can be recovered by, for example, density gradient centrifugation techniques.

Detailed Description Paragraph Right (63):
Preferably, the chimeric molecule is contacted with the antigen presenting cell in vivo. Acceptable protocols to administer therapeutic compositions in vivo in an effective manner include individual dose size, number of doses, frequency of dose administration and mode of administration. Determination of such protocols can be accomplished by those skilled in the art depending upon a variety of variables, including the animal to be treated, the type of treatment being administered (e.g., graft rejection prevention or treatment of an autoimmune disease) and the stage of disease.

Detailed Description Paragraph Right (65):
The manner of administration of a therapeutic composition of the present invention can depend upon the particular purpose for the delivery (e.g., treatment of disease or prevention of graft rejection), the overall health and condition of the recipient and the judgement of the physician or technician administering the therapeutic composition. A therapeutic composition of the present invention can be administered to an animal using a variety of methods. Such delivery methods can include parenteral, topical, oral or local administration, such as intradermally or by

Detailed Description Paragraph Right (76):
It is within the scope of the invention that the pre-treatment of a recipient and the treatment of a graft tissue can be performed separately or in combination, depending on the parameters of the transplantation (e.g., donor-recipient allotype match, type of tissue etc.). It is also within the scope of the present invention that modifications can be made to the therapeutic processes disclosed herein. For example, subjects afflicted with autoimmune disease can treated by systemically administering a therapeutic composition of the present invention using similar steps as those outlined for the pre-treatment of graft recipients. Alternatively, a therapeutic composition can be administered to subjects afflicted with localized autoimmune diseases, such as rheumatoid arthritis, by directly injecting the composition into a diseased area such as a joint. Other examples of autoimmune diseases that can be treated using a therapeutic composition of the present invention include systemic lupus erythematosus, myasthenia gravis, rheumatoid arthritis, insulin-dependent diabetes mellitus, multiple sclerosis, celiac disease, autoimmune thyroiditis, Addison's disease, Graves' disease and rheumatic carditis.

CLAIMS:

10. A recombinant cell having: (1) a first recombinant molecule comprising a first nucleic acid molecule operatively linked to an expression vector, said first nucleic acid molecule having a sequence encoding a first CD2 protein; and (2) a second recombinant molecule comprising a second nucleic acid molecule operatively linked to an expression vector, said second nucleic acid molecule having a sequence encoding a second protein comprising a targeting immunoglobulin molecule selected from the group consisting of a targeting immunoglobulin molecule having a variable region that binds to a tissue graft cell surface molecule that differentiates a host cell from a tissue graft cell and a targeting immunoglobulin molecule having a variable region that selectively targets a molecule on the surface of a cell involved in an autoimmune

response.

15. A composition comprising: a T lymphocyte immunosuppression molecule comprising a recombinant chimeric molecule having a targeting immunoglobulin molecule selected from the group consisting of a targeting immunoglobulin molecule having a variable region that binds to a tissue graft cell surface molecule that differentiates a host cell from a tissue graft cell and a targeting immunoglobulin molecule having a variable region that selectively targets a molecule on the surface of a cell involved in an autoimmune response, wherein said targeting immunoglobulin molecule is linked to a CD2 protein; and a pharmaceutically acceptable carrier.

16. A method for producing a T lymphocyte immunosuppression molecule, comprising:

(a) providing a first protein comprising a CD2 protein;

(b) providing a second protein comprising a targeting immunoglobulin molecule selected from the group consisting of a targeting immunoglobulin molecule having a variable region that binds to a tissue graft cell surface molecule that differentiates a host cell from a tissue graft cell and a targeting immunoglobulin molecule having a variable region that selectively targets a molecule on the surface of a cell involved in an autoimmune response; and

(c) linking said first protein to said second protein to form a chimeric molecule.

23. A T lymphocyte immunosuppression molecule comprising a chimeric molecule having a CD2 protein, wherein said protein is linked to a targeting immunoglobulin molecule that binds by its variable region to a molecule which selectively targets a cell involved in an autoimmune response.

31. A T lymphocyte immunosuppression molecule comprising a chimeric molecule having a CD2 protein, wherein said protein is linked to a monovalent targeting immunoglobulin molecule that binds by its variable region to a molecule on the surface of cell selected from the group consisting of a tissue graft cell that differentiates a host cell from said tissue graft cell, and a cell involved in an autoimmune response.

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L60: Entry 16 of 21 File: USPT May 9, 2000

US-PAT-NO: 6060054
DOCUMENT-IDENTIFIER: US 6060054 A

TITLE: Product for T lymphocyte immunosuppression

DATE-ISSUED: May 9, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Staerz; Uwe D.	Denver	CO		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
National Jewish Medical and Research Center	Denver	CO			02

APPL-NO: 8/ 630172 [PALM]
DATE FILED: April 10, 1996

INT-CL: [7] A61 K 39/395, A61 K 38/17, C12 N 15/12, C12 N 15/13

US-CL-ISSUED: 424/134.1; 424/192.1, 424/193.1, 435/69.1, 435/455, 435/471, 530/350, 530/387.3, 530/391.1, 514/8, 514/885
US-CL-CURRENT: 424/134.1; 424/192.1, 424/193.1, 435/455, 435/471, 435/69.1, 514/8, 514/885, 530/350, 530/387.3, 530/391.1

FIELD-OF-SEARCH: 424/130.1, 424/134.1, 424/192.1, 424/194.1, 424/193.1, 424/195.4, 435/69.1, 435/70.1, 435/71.1, 435/172.3, 435/251.3, 435/455, 435/471, 514/8, 514/885, 530/387.3, 530/391.1, 530/350

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4950480	August 1990	Barber et al.	
☐	5098833	March 1992	Lasky et al.	435/69.1
☐	5116964	May 1992	Capon et al.	536/27
☐	5204449	April 1993	Puri	530/391.7
☐	5225538	July 1993	Capon et al.	530/387.3
☐	5242687	September 1993	Tykocinski et al.	
☐	5336603	August 1994	Capon et al.	435/69.7
☐	5359046	October 1994	Capon et al.	536/23.4
☐	5428130	June 1995	Capon et al.	530/350

FOREIGN PATENT DOCUMENTS

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L61	L60 same antibody	99	L61
L60	(CD95 or Fas or APO-1 or apo1 or apo?1) adj ligand or (apo1lor apo-1l or Fasl or cd95l)	334	L60
L59	(CD95 or Fas or APO-1 or apo1 or apo?1) near antibody	197	L59
L58	l57 and l46	6	L58
L57	L56 and l53	6	L57
L56	((CD95 or Fas or APO-1 or apo1 or apo?1) and ligand) near antibody	39	L56
L55	L54 and l45	32	L55
L54	L53 and l48	223	L54
L53	l9 and (encephalomyelitis or (multiple adj sclerosis))	3956	L53
L52	L49 and l7	2	L52
L51	L49 and l27	2	L51
L50	L49 and l29	70	L50
L49	l47 and l48	102	L49
L48	fas same antibody	712	L48
L47	L45 and l46	175	L47
L46	ligand same antibody	11940	L46
L45	Fas near ligand and antibody	264	L45
L44	Fas near ligand and antibody	264	L44
	DB=USPT,PGPB,DWPI; PLUR=YES; OP=OR		
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L42	l39 and (FAs same antibody)	108	L42
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L40	L38 and (Fas same (autoimmune or auto-immune or auto?immune) and (disease or disfuntion or dysfunction))	200	L40
L39	L38 and Fas same autoimmune	192	L39
L38	L22 and L26	834	L38
L37	L36 and L29	32	L37
L36	L35 and L34	41	L36
L35	L34 and ((supress or inhibit) same (Fas and ligand and bind))	41	L35

L34	Fas and (Fas near ligand)	370	L34
L33	L30 and @PY>=1998	767	L33
L32	L30@PY >=1998	4294967295	L32
L31	L30 @PY >=1998	4038761	L31
L30	L29 and L22	834	L30
L29	(autoimmune or auto-immune or auto?immune) and (disease or disfuntion or dysfunction)	19132	L29
L28	L27 and L23	30	L28
L27	L26 and demyelinat$	637	L27
L26	(autoimmune or auto-immune or auto?immune) and (disease or disfuntion)	19101	L26
L25	autoimmune and (disease or dysfunction)	18062	L25
L24	autoimmune and disease or dysfunction	31402	L24
L23	L21 and L22	482	L23
L22	Fas or (Fas near ligand)	32588	L22
L21	apoptosis and (autoimmune or auto-immune or auto?immune)	2002	L21
L20	L18 and (Fas same (autoimmune or auto-immune or auto?immune) and (disease or disfuntion or dysfunction))	200	L20
L19	L18 and Fas same autoimmune	192	L19
L18	l2 and l6	834	L18
L17	L16 and l9	32	L17
L16	L15 and l14	41	L16
L15	L14 and ((supress or inhibit) same (Fas and ligand and bind))	41	L15
L14	Fas and (Fas near ligand)	370	L14
L13	L10 and @PY>=1998	767	L13
L12	L10@PY >=1998	4294967295	L12
L11	L10 @PY >=1998	4038761	L11
L10	L9 and l2	834	L10
L9	(autoimmune or auto-immune or auto?immune) and (disease or disfuntion or dysfunction)	19132	L9
L8	L7 and L3	30	L8
L7	L6 and demyelinat$	637	L7
L6	(autoimmune or auto-immune or auto?immune) and (disease or disfuntion)	19101	L6
L5	autoimmune and (disease or dysfunction)	18062	L5
L4	autoimmune and disease or dysfunction	31402	L4
L3	L1 and L2	482	L3
L2	Fas or (Fas near ligand)	32588	L2
L1	apoptosis and (autoimmune or auto-immune or auto?immune)	2002	L1

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L16	L15 and l14	41	L16
L15	L14 and ((supress or inhibit) same (Fas and ligand and bind))	41	L15
L14	Fas and (Fas near ligand)	370	L14
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L8	L7 and L3	30	L8
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L5	autoimmune and (disease or dysfunction)	18062	L5
L4	autoimmune and disease or dysfunction	31402	L4
L3	L1 and L2	482	L3
L2	Fas or (Fas near ligand)	32588	L2
L1	apoptosis and (autoimmune or auto-immune or auto?immune)	2002	L1

END OF SEARCH HISTORY